PCT10

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RAW SEQUENCE LISTING   DATE: 03/13/2002
PATENT APPLICATION: US/10/069,908   TIME: 13:54:43

Input Set : A:\sequence.ST25.txt
Output Set: N:\CRF3\03132002\J069908.raw

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      3 <110> APPLICANT: Nielsen, Per Munk
      5 <120> TITLE OF INVENTION: Maltogenic Amylase-modified Starch Derivatives
      7 <130> FILE REFERENCE: 6001.204-US
C-->  9 <140> CURRENT APPLICATION NUMBER: US/10/069,908
C-->  9 <141> CURRENT FILING DATE: 2002-02-28
      9 <160> NUMBER OF SEQ ID NOS: 14
     11 <170> SOFTWARE: PatentIn version 3.1
     13 <210> SEQ ID NO: 1
     14 <211> LENGTH: 2160
     15 <212> TYPE: DNA
     16 <213> ORGANISM: Bacillus sp.
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     19 <221> NAME/KEY: CDS
     20 <222> LOCATION: (1)..(2157)
     21 <223> OTHER INFORMATION:
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     25 <221> NAME/KEY: mat_peptide
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     32 Met Lys Lys Lys Thr Leu Ser Leu Phe Val Gly Leu Met Leu Leu Ile
     33             -30                 -25                 -20
     35 ggt ctt ctg ttc agc ggt tct ctt ccg tac aat cca aac gcc gct gaa      96
     36 Gly Leu Leu Phe Ser Gly Ser Leu Pro Tyr Asn Pro Asn Ala Ala Glu
     37             -15                 -10                 -5
     39 gcc agc agt tcc gca agc gtc aaa ggg gac gtg att tac cag att atc     144
     40 Ala Ser Ser Ser Ala Ser Val Lys Gly Asp Val Ile Tyr Gln Ile Ile
     41 -1  1                   5                   10                  15
     43 att gac cgg ttt tac gat ggg gac acg acg aac aac aat cct gcc aaa     192
     44 Ile Asp Arg Phe Tyr Asp Gly Asp Thr Thr Asn Asn Asn Pro Ala Lys
     45                 20                  25                  30
     47 agt tat gga ctt tac gat ccg acc aaa tcg aag tgg aaa atg tat tgg     240
     48 Ser Tyr Gly Leu Tyr Asp Pro Thr Lys Ser Lys Trp Lys Met Tyr Trp
     49                 35                  40                  45
     51 ggc ggg gat ctg gag ggg gtt cgt caa aaa ctt cct tat ctt aaa cag     288
     52 Gly Gly Asp Leu Glu Gly Val Arg Gln Lys Leu Pro Tyr Leu Lys Gln
     53             50                  55                  60
     55 ctg ggc gta acg aca atc tgg ttg tcc ccg gtt ttg gac aat ctg gat     336
     56 Leu Gly Val Thr Thr Ile Trp Leu Ser Pro Val Leu Asp Asn Leu Asp
     57         65                  70                  75
     59 aca ctg gcg ggc acc gat aac acg ggc tat cac gga tac tgg acg cgc     384
     60 Thr Leu Ala Gly Thr Asp Asn Thr Gly Tyr His Gly Tyr Trp Thr Arg
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61 80                      85                   90                    95
63 gat ttt aaa cag att gag gaa cat ttc ggg aat tgg acc aca ttt gac     432
64 Asp Phe Lys Gln Ile Glu Glu His Phe Gly Asn Trp Thr Thr Phe Asp
65                100                 105                   110
67 acg ttg gtc aat gat gct cac caa aac gga atc aag gtg att gtc gac     480
68 Thr Leu Val Asn Asp Ala His Gln Asn Gly Ile Lys Val Ile Val Asp
69             115                 120                   125
71 ttt gtg ccc aat cat tcg act cct ttt aag gca aac gat tcc acc ttt     528
72 Phe Val Pro Asn His Ser Thr Pro Phe Lys Ala Asn Asp Ser Thr Phe
73             130                 135                   140
75 gcg gaa ggc ggc gcc ctc tac aac aat gga acc tat atg ggc aat tat     576
76 Ala Glu Gly Gly Ala Leu Tyr Asn Asn Gly Thr Tyr Met Gly Asn Tyr
77        145                 150                   155
79 ttt gat gac gca aca aaa ggg tac ttc cac cat aat ggg gac atc agc     624
80 Phe Asp Asp Ala Thr Lys Gly Tyr Phe His His Asn Gly Asp Ile Ser
81 160                 165                   170                   175
83 aac tgg gac gac cgg tac gag gcg caa tgg aaa aac ttc acg gat cca     672
84 Asn Trp Asp Asp Arg Tyr Glu Ala Gln Trp Lys Asn Phe Thr Asp Pro
85                 180                 185                   190
87 gcc ggt ttc tcg ctt gcc gat ttg tcg cag gaa aat ggc acg att gct     720
88 Ala Gly Phe Ser Leu Ala Asp Leu Ser Gln Glu Asn Gly Thr Ile Ala
89             195                 200                   205
91 caa tac ctg acc gat gcg gcg gtt caa ttg gta gca cat gga gcg gat     768
92 Gln Tyr Leu Thr Asp Ala Ala Val Gln Leu Val Ala His Gly Ala Asp
93        210                 215                   220
95 ggt ttg cgg att gat gcg gtg aag cat ttt aat tcg ggg ttc tcc aaa     816
96 Gly Leu Arg Ile Asp Ala Val Lys His Phe Asn Ser Gly Phe Ser Lys
97        225                 230                   235
99 tcg ttg gcc gat aaa ctg tac caa aag aaa gac att ttc ctg gtg ggg     864
100 Ser Leu Ala Asp Lys Leu Tyr Gln Lys Lys Asp Ile Phe Leu Val Gly
101 240                 245                   250                   255
103 gaa tgg tac gga gat gac ccc gga aca gcc aat cat ctg gaa aag gtc    912
104 Glu Trp Tyr Gly Asp Asp Pro Gly Thr Ala Asn His Leu Glu Lys Val
105                 260                 265                   270
107 cgg tac gcc aac aac agc ggt gtc aat gtg ctg gat ttt gat ctc aac    960
108 Arg Tyr Ala Asn Asn Ser Gly Val Asn Val Leu Asp Phe Asp Leu Asn
109             275                 280                   285
111 acg gtg att cga aat gtg ttc ggc aca ttt acg caa acg atg tac gat    1008
112 Thr Val Ile Arg Asn Val Phe Gly Thr Phe Thr Gln Thr Met Tyr Asp
113             290                 295                   300
115 ctt aac aat atg gtg aac caa acg ggg aac gag tac aaa tac aaa gaa    1056
116 Leu Asn Asn Met Val Asn Gln Thr Gly Asn Glu Tyr Lys Tyr Lys Glu
117        305                 310                   315
119 aat cta atc aca ttt atc gat aac cat gat atg tca aga ttt ctt tcg    1104
120 Asn Leu Ile Thr Phe Ile Asp Asn His Asp Met Ser Arg Phe Leu Ser
121 320                 325                   330                   335
123 gta aat tcg aac aag gcg aat ttg cac cag gcg ctt gct ttc att ctc    1152
124 Val Asn Ser Asn Lys Ala Asn Leu His Gln Ala Leu Ala Phe Ile Leu
125                 340                 345                   350
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RAW SEQUENCE LISTING   DATE: 03/13/2002
PATENT APPLICATION: US/10/069,908   TIME: 13:54:44

Input Set : A:\sequence.ST25.txt
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127 act tcg cgg ggt acg ccc tcc atc tat tat gga acc gaa caa tac atg    1200
128 Thr Ser Arg Gly Thr Pro Ser Ile Tyr Tyr Gly Thr Glu Gln Tyr Met
129         355             360             365
131 gca ggc ggc aat gac ccg tac aac cgg ggg atg atg ccg gcg ttt gat    1248
132 Ala Gly Gly Asn Asp Pro Tyr Asn Arg Gly Met Met Pro Ala Phe Asp
133         370             375             380
135 acg aca acc acc gcc ttt aaa gag gtg tca act ctg gcg ggg ttg cgc    1296
136 Thr Thr Thr Thr Ala Phe Lys Glu Val Ser Thr Leu Ala Gly Leu Arg
137         385             390             395
139 agg aac aat gcg gcg atc cag tac ggc acc acc acc cag cgt tgg atc    1344
140 Arg Asn Asn Ala Ala Ile Gln Tyr Gly Thr Thr Thr Gln Arg Trp Ile
141 400             405             410             415
143 aac aat gat gtt tac att tat gaa cgg aaa ttt ttc aac gat gtc gtg    1392
144 Asn Asn Asp Val Tyr Ile Tyr Glu Arg Lys Phe Phe Asn Asp Val Val
145             420             425             430
147 ttg gtg gcc atc aat cga aac acg caa tcc tcc tat tcg att tcc ggt    1440
148 Leu Val Ala Ile Asn Arg Asn Thr Gln Ser Ser Tyr Ser Ile Ser Gly
149             435             440             445
151 ttg cag acg gcc ttg cca aat ggc agc tat gcg gat tat ctg tca ggg    1488
152 Leu Gln Thr Ala Leu Pro Asn Gly Ser Tyr Ala Asp Tyr Leu Ser Gly
153         450             455             460
155 ctg ttg ggg ggg aac ggg att tcc gtt tcc aat gga agt gtc gct tcg    1536
156 Leu Leu Gly Gly Asn Gly Ile Ser Val Ser Asn Gly Ser Val Ala Ser
157     465             470             475
159 ttc acg ctt gcg cct gga gcc gtg tct gtt tgg cag tac agc aca tcc    1584
160 Phe Thr Leu Ala Pro Gly Ala Val Ser Val Trp Gln Tyr Ser Thr Ser
161 480             485             490             495
163 gct tca gcg ccg caa atc gga tcg gtt gct cca aat atg ggg att ccg    1632
164 Ala Ser Ala Pro Gln Ile Gly Ser Val Ala Pro Asn Met Gly Ile Pro
165             500             505             510
167 ggt aat gtg gtc acg atc gac ggg aaa ggt ttt ggg acg acg cag gga    1680
168 Gly Asn Val Val Thr Ile Asp Gly Lys Gly Phe Gly Thr Thr Gln Gly
169             515             520             525
171 acc gtg aca ttt ggc gga gtg aca gcg act gtg aaa tcc tgg aca tcc    1728
172 Thr Val Thr Phe Gly Gly Val Thr Ala Thr Val Lys Ser Trp Thr Ser
173         530             535             540
175 aat cgg att gaa gtg tac gtt ccc aac atg gcc gcc ggg ctg acc gat    1776
176 Asn Arg Ile Glu Val Tyr Val Pro Asn Met Ala Ala Gly Leu Thr Asp
177     545             550             555
179 gtg aaa gtc acc gcg ggt gga gtt tcc agc aat ctg tat tct tac aat    1824
180 Val Lys Val Thr Ala Gly Gly Val Ser Ser Asn Leu Tyr Ser Tyr Asn
181 560             565             570             575
183 att ttg agt gga acg cag aca tcg gtt gtg ttt act gtg aaa agt gcg    1872
184 Ile Leu Ser Gly Thr Gln Thr Ser Val Val Phe Thr Val Lys Ser Ala
185             580             585             590
187 cct ccg acc aac ctg ggg gat aag att tac ctg acg ggc aac ata ccg    1920
188 Pro Pro Thr Asn Leu Gly Asp Lys Ile Tyr Leu Thr Gly Asn Ile Pro
189         595             600             605
191 gaa ttg ggg aat tgg agc acg gat acg agc gga gcc gtt aac aat gcg    1968
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192 Glu Leu Gly Asn Trp Ser Thr Asp Thr Ser Gly Ala Val Asn Asn Ala
193   610   615   620
195 caa ggg ccc ctg ctc gcg ccc aat tat ccg gat tgg ttt tat gta ttc   2016
196 Gln Gly Pro Leu Leu Ala Pro Asn Tyr Pro Asp Trp Phe Tyr Val Phe
197   625   630   635
199 agc gtt cca gca gga aag acg att caa ttc aag ttc ttc atc aag cgt   2064
200 Ser Val Pro Ala Gly Lys Thr Ile Gln Phe Lys Phe Phe Ile Lys Arg
201 640   645   650   655
203 gcg gat gga acg att caa tgg gag aat ggt tcg aac cac gtg gcc aca   2112
204 Ala Asp Gly Thr Ile Gln Trp Glu Asn Gly Ser Asn His Val Ala Thr
205   660   665   670
207 act ccc acg ggt gca acc ggt aac att act gtt acg tgg caa aac tag   2160
208 Thr Pro Thr Gly Ala Thr Gly Asn Ile Thr Val Thr Trp Gln Asn
209   675   680   685
212 <210> SEQ ID NO: 2
213 <211> LENGTH: 719
214 <212> TYPE: PRT
215 <213> ORGANISM: Bacillus sp.
217 <400> SEQUENCE: 2
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223 Gly Leu Leu Phe Ser Gly Ser Leu Pro Tyr Asn Pro Asn Ala Ala Glu
224   -15   -10   -5
227 Ala Ser Ser Ser Ala Ser Val Lys Gly Asp Val Ile Tyr Gln Ile Ile
228 -1 1   5   10   15
231 Ile Asp Arg Phe Tyr Asp Gly Asp Thr Thr Asn Asn Asn Pro Ala Lys
232   20   25   30
235 Ser Tyr Gly Leu Tyr Asp Pro Thr Lys Ser Lys Trp Lys Met Tyr Trp
236   35   40   45
239 Gly Gly Asp Leu Glu Gly Val Arg Gln Lys Leu Pro Tyr Leu Lys Gln
240   50   55   60
243 Leu Gly Val Thr Thr Ile Trp Leu Ser Pro Val Leu Asp Asn Leu Asp
244   65   70   75
247 Thr Leu Ala Gly Thr Asp Asn Thr Gly Tyr His Gly Tyr Trp Thr Arg
248 80   85   90   95
251 Asp Phe Lys Gln Ile Glu Glu His Phe Gly Asn Trp Thr Thr Phe Asp
252   100   105   110
255 Thr Leu Val Asn Asp Ala His Gln Asn Gly Ile Lys Val Ile Val Asp
256   115   120   125
259 Phe Val Pro Asn His Ser Thr Pro Phe Lys Ala Asn Asp Ser Thr Phe
260   130   135   140
263 Ala Glu Gly Gly Ala Leu Tyr Asn Asn Gly Thr Tyr Met Gly Asn Tyr
264   145   150   155
267 Phe Asp Asp Ala Thr Lys Gly Tyr Phe His His Asn Gly Asp Ile Ser
268 160   165   170   175
271 Asn Trp Asp Asp Arg Tyr Glu Ala Gln Trp Lys Asn Phe Thr Asp Pro
272   180   185   190
275 Ala Gly Phe Ser Leu Ala Asp Leu Ser Gln Glu Asn Gly Thr Ile Ala
276   195   200   205

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279 Gln Tyr Leu Thr Asp Ala Ala Val Gln Leu Val Ala His Gly Ala Asp
280         210                 215                 220
283 Gly Leu Arg Ile Asp Ala Val Lys His Phe Asn Ser Gly Phe Ser Lys
284         225                 230                 235
287 Ser Leu Ala Asp Lys Leu Tyr Gln Lys Lys Asp Ile Phe Leu Val Gly
288 240                 245                 250                 255
291 Glu Trp Tyr Gly Asp Asp Pro Gly Thr Ala Asn His Leu Glu Lys Val
292                 260                 265                 270
295 Arg Tyr Ala Asn Asn Ser Gly Val Asn Val Leu Asp Phe Asp Leu Asn
296                 275                 280                 285
299 Thr Val Ile Arg Asn Val Phe Gly Thr Phe Thr Gln Thr Met Tyr Asp
300             290                 295                 300
303 Leu Asn Asn Met Val Asn Gln Thr Gly Asn Glu Tyr Lys Tyr Lys Glu
304         305                 310                 315
307 Asn Leu Ile Thr Phe Ile Asp Asn His Asp Met Ser Arg Phe Leu Ser
308 320                 325                 330                 335
311 Val Asn Ser Asn Lys Ala Asn Leu His Gln Ala Leu Ala Phe Ile Leu
312                 340                 345                 350
315 Thr Ser Arg Gly Thr Pro Ser Ile Tyr Tyr Gly Thr Glu Gln Tyr Met
316             355                 360                 365
319 Ala Gly Gly Asn Asp Pro Tyr Asn Arg Gly Met Met Pro Ala Phe Asp
320             370                 375                 380
323 Thr Thr Thr Thr Ala Phe Lys Glu Val Ser Thr Leu Ala Gly Leu Arg
324         385                 390                 395
327 Arg Asn Asn Ala Ala Ile Gln Tyr Gly Thr Thr Thr Gln Arg Trp Ile
328 400                 405                 410                 415
331 Asn Asn Asp Val Tyr Ile Tyr Glu Arg Lys Phe Phe Asn Asp Val Val
332                 420                 425                 430
335 Leu Val Ala Ile Asn Arg Asn Thr Gln Ser Ser Tyr Ser Ile Ser Gly
336             435                 440                 445
339 Leu Gln Thr Ala Leu Pro Asn Gly Ser Tyr Ala Asp Tyr Leu Ser Gly
340         450                 455                 460
343 Leu Leu Gly Gly Asn Gly Ile Ser Val Ser Asn Gly Ser Val Ala Ser
344         465                 470                 475
347 Phe Thr Leu Ala Pro Gly Ala Val Ser Val Trp Gln Tyr Ser Thr Ser
348 480                 485                 490                 495
351 Ala Ser Ala Pro Gln Ile Gly Ser Val Ala Pro Asn Met Gly Ile Pro
352             500                 505                 510
355 Gly Asn Val Val Thr Ile Asp Gly Lys Gly Phe Gly Thr Thr Gln Gly
356             515                 520                 525
359 Thr Val Thr Phe Gly Gly Val Thr Ala Thr Val Lys Ser Trp Thr Ser
360             530                 535                 540
363 Asn Arg Ile Glu Val Tyr Val Pro Asn Met Ala Ala Gly Leu Thr Asp
364         545                 550                 555
367 Val Lys Val Thr Ala Gly Gly Val Ser Ser Asn Leu Tyr Ser Tyr Asn
368 560                 565                 570                 575
371 Ile Leu Ser Gly Thr Gln Thr Ser Val Val Phe Thr Val Lys Ser Ala
372             580                 585                 590
375 Pro Pro Thr Asn Leu Gly Asp Lys Ile Tyr Leu Thr Gly Asn Ile Pro
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VERIFICATION SUMMARY   DATE: 03/13/2002
PATENT APPLICATION: US/10/069,908   TIME: 13:54:45

Input Set : A:\sequence.ST25.txt
Output Set: N:\CRF3\03132002\J069908.raw

L:9 M:270 C: Current Application Number differs, Replaced Current Application No
L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date